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# How to Establish a Lawn

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**W. ATLEE BURPEE CO., Seed Growers, Philadelphia, Pennsylvania, U. S. A.**

The outward beauty of the house depends largely on its surroundings. Well-placed plantings of trees, shrubs, and flower-beds, with green lawn in between, greatly enhance the appearance of any building, new or old. A large proportion of lawn lends beauty to the whole setting, and a view over an open greenward bordered by shrubbery gives charm to the picture of home and suggests comfort. A good lawn can be produced under almost any conditions. This, however, cannot be achieved by scratching the hard surface of the ground, scattering thereon an inappropriate quantity of seed of indifferent quality and then relying upon nature to do the rest. The establishing of a lawn requires some work and regular attention. Considering the permanence and importance of a lawn, it is worthy of your best efforts and care.

In this leaflet we give directions which have assisted our friends in establishing acres and acres of the finest lawns from the Burpee Lawn-Grass Mixtures.

## TIME TO SOW

A lawn may be started almost any time of the year. In the northern states the best and quickest results are gotten by sowing the seed as early in the spring as possible in order to establish a firm sod before hot weather. Sowing may also be done during August and September, in which case the grass will make its most abundant growth during the cool fall months. Grass germinates best and grows fastest while the weather is cool and moist. Summer sowings, made during the hot weather, require the closest attention to insure success. Seed sown as late as October does not germinate usually until the next spring, and is liable to winter injury. Sometimes the seed is sown on the last light spring snows, and when the snows melt, the seed is carried into the soil and germinates as the weather warms up.

## GRADING

Proper preparations before sowing will save much labor and expense later on. First of all, due attention must be given to the leveling of the ground. Slight and well-curved grades and slopes break the monotony where large areas are placed in sod. Abrupt banks and holes look bad, make the care of the lawn difficult, and are often the cause of bare and unsightly spots. The small lawn looks best if kept perfectly even. Banks or terraces are permissible only where they cannot be avoided.

## THE SOIL

Grasses are generally looked upon as being able to grow almost anywhere. This may be the case with certain varieties, but the finer lawn grasses are surely an exception. The best soil is a rich loam, containing a fair portion of clay, with a tendency to be rather heavy and compact, and fairly retentive of moisture. It should be deep and porous, so that the roots can penetrate deeply. Wet soils are unsuited unless they are properly drained. Sandy soils should be improved with humus to prevent the water from leaching through quickly. The soil around new buildings is generally unsuited, as it consists mostly of unfertile sub-soil mixed with building débris. It should either be built up, or a good productive surface soil, preferably from some cultivated field, should be filled in 6 to 12 inches deep.

## IMPROVING THE SOIL

An ordinary and reasonably fertile soil should be plowed or spaded to a depth of six inches, unless the top-soil is very shallow, in which case care must be taken not to bring the raw sub-soil to the surface. An application of 1000 pounds of lime per acre (15 pounds for 400 square feet) should be spread over the rough surface to make the soil sweet. Since the lawn is a permanent proposition, every means should be taken to bring the soil into a high state of fertility which will last for a number of years. Well-rotted manure, free from weed-seed, will best serve this purpose. It should be evenly distributed over the surface, two to three weeks after the lime has been applied, using 10 to 15 tons per acre (200 to 300 pounds for 400 square feet). It should then be harrowed or raked into the top layer of soil. In addition to the manure, bone meal, at the rate of 300 to 600 pounds per acre (6 pounds for 400 square feet), and wood ashes, at the rate of 5 to 10 tons per acre (100 to 200 pounds for 400 square feet), will provide plant food in the right proportions. Well-rotted manure is sometimes hard to get, and a mixture of 100 pounds nitrate of soda, 100 pounds bone meal, 100 pounds acid phosphate (dissolved rock), and 100 pounds muriate of potash may be used at the rate of 400 pounds per acre (1½ pounds of each for every 400 square feet), instead of the manure, bone meal, and wood ashes. Many fertilizer factories manufacture special brands for the lawn and a formula such as 5-6-5; or 4-8-8; or 4-8-6 is usually offered. These ready mixtures bought from a reliable house are generally just as good and more practical than home-mixed fertilizer.

Dried sheep manure is also recommended at the rate of 1500 to 3000 pounds per acre (40 pounds for 400 square feet). All the fertilizer must be thoroughly worked into the soil, after which the land should be allowed to rest and settle for about a week.

Grass will not germinate well in loose soil, and even if it does, the young plants find it hard to get rooted. For this reason the soil in every case should be allowed to settle thoroughly after preparation. If the time cannot be spared, a roller should be used to firm the soil. Afterward only the surface should be loosened up again and brought into as fine a condition as possible just previous to the sowing of the seed.

The building up of an unproductive soil requires a full year, but it is the only practical method by which good results can be had on large tracts of poor soil. For the small plot, the carting in of good soil is to be preferred. Begin the improvement of a poor soil early in the spring when the land should be plowed up to a depth of six or eight inches. An application of from 1000 to 2000 pounds of quicklime per acre should be given to the plowed surface. Two or three weeks later from 8 to 10 tons per acre of well-decomposed stable manure and 1000 pounds of ground rock per acre should be harrowed into the surface. A week later harrow over the surface and make it as even as possible. Soy-beans (60 to 90 pounds per acre broadcasted), Cow Peas (60 to 120 pounds per acre broadcast), Clover, or some other leguminous crop suitable to local conditions should then be sown. When well grown, the green plants are plowed under and the land left in the rough furrow over winter. The following spring 400 to 800 pounds of a good complete fertilizer (5-6-8) should be applied and the land then worked into a good seed-bed.

### GRASSES FOR THE LAWN

The number of grasses which are adapted for lawns is comparatively small. A good lawn grass must be fine-leaved and sod-forming. Those with creeping rootstocks, short joints, and an abundance of long, narrow leaves about the crown are best suited for lawn-making. The color of the grass is also important, since we wish a deep green sward throughout the year. Furthermore, the ideal lawn grass must resist the drought of summer, bear continuous clipping without injury, and respond quickly to the warm weather of early spring. Above all, it must be suited to the conditions of soil and climate. In most cases a mixture of a number of lawn grasses will give better results than any one variety used alone. Kentucky Blue Grass is sometimes sown by itself at the rate of 80 pounds per acre, and in the South Bermuda Grass is used alone at the rate of 7 pounds per acre. Complete mixtures, however, have many advantages over a single variety. First of all, a fine sod is assured by the fact that the grass best suited for the particular soil will thrive and form the basis for the lawn. Second, mixtures contain some quick-growing grasses which give an effect soon after sowing and afford protection to the slower-growing and more permanent grasses which require shade and moisture for their proper germination and development.

We have made a close study of lawn grasses and have tried many combinations to determine those best suited for various conditions.

### BURPEE'S FORDHOOK FINEST LAWN GRASS MIXTURE

We are proud of Fordhook Finest Grass Mixture which, we know from yearly comparative trials at Fordhook Farms, is unsurpassed for best and permanent results. Only the very finest varieties of the most suitable grasses for lawn making are used in this mixture. It contains well-balanced proportions of various American and foreign fine-bladed and deeply rooting varieties, which have been proved by us to produce the best results under the varied conditions of soil and climate met with in America. This special mixture will give a green, smooth, velvety sod with a thick bottom, free from coarse grasses and clumps. It is carefully cleaned and is free from chaff.

### BURPEE'S SPECIAL TERRACE SOD GRASS MIXTURE

The terrace is often a source of a great deal of worry and trouble. This is largely due to the fact that the right grasses are not used in the making of the terrace sod. Our Special Mixture for this purpose contains only grasses that are best adapted to embankments and terraces. These grasses are all deep-rooted or have a strong, spreading root system that holds the soil firmly and prevents washing during heavy rains. Burpee's Special Terrace Sod Mixture produces a rich, velvety sod which will retain its emerald green appearance throughout the entire season. The varieties are long-lived and hardy and make a permanent growth.

### BURPEE'S SUNNY SOUTH LAWN GRASS MIXTURE

In the South the use of ordinary lawn grass does not always produce satisfactory results. We have prepared a special mixture which is particularly suited for hot, dry locations, and with care and regular watering this will produce satisfactory lawns under the most exacting conditions of weather and soil.

### BURPEE'S GOLF LINK MIXTURE

This mixture is composed exclusively of fine-bladed grasses which will withstand frequent cutting and trampling. It, in common with all the Burpee Mixtures, is free from weed seed and it contains no white clover, as the latter is unsuited for the closely cut golf lawn.

## BURPEE'S SHADY NOOK LAWN GRASS MIXTURE

Many of our customers having shade trees on their lawn or certain corners which receive but little sunlight have written us regarding the difficulty of securing a good stand of grass. Burpee's Shady Nook Mixture will take care of the shaded spots. It is composed of choice, clean seed of the finest and most costly grasses.

### RATE OF SOWING

The rate of seeding a lawn is determined by the quality of the seed, the time of the year, condition of the soil, and the purpose of the lawn. In late spring or late fall sow more thickly than in early spring or late summer. Midsummer sowings require especially heavy seeding. Sandy soils need more seed than loamy soils, dry soils more than moist soils, poor soils more than rich ones, rough land more than well-prepared beds, areas intended for constant use more than those untrampled, and small areas comparatively more than large tracts. Usually 80 to 100 pounds of seed per acre will give best results. One pound will sow a space 20 x 20 feet or 400 square feet.

Never sow grass seed sparingly; it is false economy. By seeding a lawn thinly, we are giving the weed seeds which are always present in the soil an opportunity to get a foothold among the grass plants, and this later entails much back-breaking work to free the lawn from the intruders. By using a liberal quantity of the seed the grasses will choke out the majority of the weeds, and the crowding of the various grasses results in a much finer leaf, which is most desirable.

### SOWING

The best time for sowing the seed is early in the morning or late in the afternoon, when but little air is stirring. Large areas are sown either with the grass seed attachment of the grain drill or with the wheelbarrow seeder. The latter is the quicker of the two and distributes the seed more evenly. Small areas may be sown by hand. Before sowing, the seed should be well stirred, since the heavier seeds tend to settle at the bottom of the bag. The sowing must be done systematically. Should the area be large it will be well to mark it off in strips so that an equal quantity of seed may be allowed to each division. Starting at one end of the plot, take a handful of seed, keeping the fingers lightly bent and slightly open, then with the hand low and walking in a stooping position swing the arm freely in a semi-circle, thus allowing the seed to scatter evenly. Walk back and forth at stated distance, just so far apart as to reach the seed already sown; then go over the same ground at right angles to the route already traveled and this will insure perfect distribution and no blank spaces.

It is important to cover the seed right after sowing by raking lightly over the bed with a narrow-toothed rake. One-eighth inch is the ideal depth for the seed, and one-quarter inch is as deep as is safe. A subsequent rolling with a heavy lawn roller will force the seeds down into the soil and firm the surface.

If the weather appears likely to remain dry, a good heavy watering will do lots of good. Use a fine spray to prevent washing away the seeds, but remember to thoroughly soak the soil to the depth of several inches and not merely moisten the surface.

Sometimes grass seed is sown with a nurse crop, but when sowing a complete mixture a nurse crop is often more harmful than beneficial. This practice is, however, of value on steep banks where the soil is easily washed away. Both oats and wheat are used as nurse crops, the idea being to have some very quick-growing grass-like plant to take root and hold the soil in place until the grass sod has formed. The nurse crop must be cut frequently to prevent it from smothering the lawn grasses. It usually dies out later in the year and by that time the grass has made sufficient growth to hold its own.

In sowing small banks, the soil can be thoroughly wetted before sowing in order to hold the seed well. Afterward the seeded area may be lightly covered with dry soil.

### MOWING

The beauty and health of the lawn depend on frequent and regular cutting. Mowing every three or four days will not cause any injury where a short and thick turf is wanted. On the average, once a week will be often enough. The young grass may be allowed to grow five inches high before the first cutting. Usually a scythe or sickle will be better for the first two cuttings. Later on the lawn mower will save time and labor. If the clippings are short they may be left on the lawn, where they will serve as a mulch, but if long they are better raked off. Thick heavy lawns can be cut quite closely but sparse growths should be left to grow longer. During the hot and dry weather, take care not to mow more often than is required. After each cutting, the sod should be gone over with a heavy roller, as frequent rolling will help considerably to make the lawn even and attractive. With the approach of cooler fall weather, the grass will not grow as rapidly and it is well to have the lawn go into the winter about four inches long.

### WEEDING

Usually quite a number of weeds will appear in the freshly made lawn. The seeds are either brought in by the manure or are present in the soil. Annual weeds do little harm because they will die out at the end of the season, if kept mown at all times. Perennial weeds, such as dandelion, plantain, and others, cause more trouble. These should be dug up and destroyed.

A drop of sulphuric acid or carbolic acid applied to the cut surface of the root will destroy them permanently. Keep the acid away from the grass, from clothing, and from your body.

A strong sod is the natural remedy for weeds in the lawn. The appearance of moss is a sure sign that the land is poor. Moss can be torn out by scratching over the sod with a sharp iron rake. Repeat this two or three times, a week apart, and top dress the spots with lime. Later apply fertilizer or compost and resow the spot.

### WATERING

Lawns require a great deal of water if they are to grow to perfection. During dry seasons, a thorough soaking every two weeks will do a great deal of good. Use a nozzle in watering to prevent the soil from being washed away from the roots. The fine, mist-like lawn-sprinklers may look attractive, but used during the hot part of the day they do more harm than good. Soak the lawn in the evening until the soil will not hold any more water. Light sprinkling induces shallow root-growth, whereas the roots should be encouraged to grow down deeply into the soil.

Lawns which are trampled frequently look better than those left undisturbed. This is because evenly distributed trampling helps to make the soil compact. A heavy roller may be used to do the same work. Large horse or power-driven mowers usually have a roller attached to the mower, but where a small hand-mower is used an occasional rolling as soon as the young lawn can bear it, especially after heavy rains, should be given.

### SPRING TREATMENT

Early in the spring, after the frost is out of the ground, firm the sod by means of a heavy roller. Quite often the frost raises the sod in places and it must be pressed back into contact with the soil before growth commences. Shallow depressions up to an inch deep, which may have formed during the winter, should be filled in with fine mellow soil. The grass will grow through this and give an even sod. If the lawn did not catch evenly the first year, or if for any reason thin spots appear, they may be reseeded now after the soil has been loosened up with the rake. In reseeding be sure to use the same kind of seed as originally used to get uniform results, and in every case seed heavily.

### LAWN PESTS

Lawns are usually little troubled by insects except, perhaps, by ants. These are easily banished by pouring a tablespoonful of bisulphid of carbon into small holes six inches deep and a foot apart, the holes being immediately filled up. Moles occasionally ruin the appearance of the lawn by making their tunnels just beneath the surface. They should be caught in mole-traps or can be forced to abandon their old runways by placing kerosene-soaked rags in the tunnels and closing the ends.

### TOP DRESSING

However thoroughly the lawn was prepared, it will eventually require more food in order to keep it growing. Well-rotted barnyard manure is usually the best, if applied late in the fall. It should be allowed to remain all winter and the rough part of it raked off early in the spring. For an early spring dressing, dried sheep manure can be sprinkled over the lawn, using  $1\frac{1}{2}$  to 3 tons per acre (30 pounds for 400 square feet). This will in no way interfere with the good appearance of the lawn and is very effective. Bone meal as a top dressing is used still more extensively than dried sheep manure. From 300 to 400 pounds of it are applied per acre (5 pounds for 400 square feet). Eight ounces of nitrate of soda dissolved in 24-32 gallons of water is a good liquid fertilizer and is sufficient for 400 square feet of lawn. Or dry nitrate of soda may be applied at the rate of 200-500 pounds per acre ( $2\frac{1}{2}$  pounds for 400 square feet). It has a burning effect on the foliage and should never be applied when the grass is wet with rain or dew. A good soaking after the application will carry the dissolved plant food to the roots.

To sum up, the soil and season must be right, the seed of the best quality, the sowing careful, and the subsequent attention constant. A really good lawn, with its much desired even, velvety appearance, is quite a rarity and is worth working for. There are lawns, such as the famous campus lawns at Oxford, which are centuries old and which continue to improve in appearance and hardiness. When once established, your lawn, if properly cared for, will, like these, continue to be a thing of beauty and a joy forever.

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This is one of a series of leaflets published for Free Distribution to planters of Burpee's Seeds. These leaflets are all practical, written by experts, and give the results of actual experience gained on Burpee's Fordhook Farms,—so famous as the largest and most complete trial-grounds in America,—where more than twenty-two thousand trials are conducted each year. We have accumulated in our forty odd years of planting experience a large amount of useful information which is always at your disposal. It is our aim to supply the **BEST SEEDS THAT CAN BE GROWN** and also to tell plainly the best methods of cultivation.